Insert the attached Sequence Listing in place of the Sequence Listing submitted with the Statement dated September 4, 1999.

IN THE CLAIMS

Amend the claims as follows.

Cancel claims 26, 28, 31, without prejudice.

5. (Five Times Amended) An isolated polypeptide comprising a sequence of no more than 700 consecutive amino acids of a type F botulinum toxin sequence, which comprises a sequence of amino acids selected from the group consisting of:

(a) amino acids 848-1278 of a type F botulinum toxin (SEQ ID NO: 1)

(b) amino acids 992-1135 of a type F botulinum toxin (SEQ ID NO: 3), and;

(c) amino acids 1136-1278 of a type F botulinum toxin (SEQ ID NO: 4).

H3

6. (Five Times Amended) An isolated polypeptide comprising a dimer of a polypeptide comprising no more than 700 consecutive amino acids of a type F botulinum toxin sequence, which comprises a sequence selected from the group consisting of:

(a) amino acids 848-1278 of a type F botulinum toxin (SEQ ID NO: 1)

(b) amino acids 848-991 of a type F botulinum toxin (SEQ ID NO: 2)

(c) amino acids 992-1135 of a type F botulinum toxin (SEQ ID NO: 3), and

(d) amino acids 1136-1278 of a type F botulinum toxin (SEQ ID NO: 4).

7. (Five Times Amended) A polypeptide composition comprising:

(1) an isolated polypeptide according to claim 5; and

H3

(2) an isolated polypeptide that facilitates or enhances purification polypeptide of the (1).

8. (Four Times Amended) An isolated fusion protein comprising a sequence of

H4

amino acids selected from the group consisting of SEQ ID NO:1, SEQ ID NO:2, SEQ ID NO:3, SEQ ID and NO:4, fused to a polypeptide that facilitates or enhances purification.

9. (Three Times Amended) A fusion protein according to Claim 8 wherein said polypeptide that facilitates or enhances purification is a polypeptide that binds a chromatography column.

H5

10. (Three Times Amended) A fusion protein according to Claim 9 wherein said chromatography column is an affinity chromatography column.

11. (Twice Amended) A fusion protein according to Claim 8 which comprises

H6

SEQ ID NO:1 fused to a purification moiety.

12. (Four Times Amended) A vaccine comprising a pharmaceutically acceptable carrier and a polypeptide comprising no more than 700 consecutive amino acids of a type

H7

F botulinum toxin sequence, which comprises a sequence selected from the group consisting of:

(a) amino acids 848-1278 of a type F botulinum toxin (SEQ ID NO:1),

(b) amino acids 848-991 of a type F botulinum toxin (SEQ ID NO:2),

H7 (c) amino acids 992-1135 of a type F botulinum toxin (SEQ ID NO:3),

and

(d) amino acids 1136-1278 of a type F botulinum toxin (SEQ ID NO:4).

13. (Three Times Amended) A recombinant DNA encoding a polypeptide according to claim 5.

14. (Three Times Amended) A method of producing a polypeptide according to

H8 claim 8 comprising the steps of:

(a) expressing in a host cell a DNA encoding a fusion protein according to claim 8,

(b) obtaining from said host cell an extract comprising the fusion protein, and

(c) purifying the fusion protein using a chromatography column.

17. (Three Times Amended) A method of making a pharmaceutical composition comprising:

H9 (a) expressing in a host cell a DNA fragment encoding a fusion protein according to claim 8,

(b) obtaining from said host cell an extract comprising the fusion protein,

(c) purifying the fusion protein using (a) chromatography column,

#9 (d) incorporating the purified fusion protein into a pharmaceutical composition.

19. (Four Times Amended) A pharmaceutical composition comprising a fusion

#10 protein according to claim 8, and

a pharmaceutically acceptable carrier.

25. (Amended) A recombinant DNA encoding a fusion protein according to claim

#11 8.

30. (Three Times Amended) The fusion protein of claim 8 wherein (1) is at least

#12 one amino acid sequence selected from the group consisting of SEQ ID NO: 2, SEQ ID NO: 3, and SEQ ID NO: 4.

33. (Amended) A method of producing antibodies in a mammal against botulinum

#13 toxin, comprising administering to said mammal a composition of claim 19.

Add the following claims.

--34. (New) A method of vaccinating a mammal against a botulinum toxin, said method comprising administering to said mammal a polypeptide comprising no more

#14 than 700 consecutive amino acids of a type F botulinum toxin sequence, which includes a sequence selected from the group consisting of:

(a) amino acids 848-1278 of a type F botulinum toxin (SEQ ID NO:1)

(b) amino acids 848-991 of a type F botulinum toxin (SEQ ID NO:2)

(c) amino acids 992-1135 of a type F botulinum toxin (SEQ ID NO:3),

and;

(d) amino acids 1136-1278 of a type F botulinum toxin (SEQ ID NO:4).

35. (New) A method according to claim 34 wherein the said sequence is fused to a polypeptide that facilitates or enhances purification.

36. (New) A method according to claim 34 wherein said polypeptide comprises no more than 500 consecutive amino acids of a type F botulinum toxin sequence.

H14

37. (New) A method according to claim 34 wherein said polypeptide consists of a sequence of amino acids selected from the group consisting of:

(a) amino acids 848-1278 of a type F botulinum toxin (SEQ ID NO:1)

(b) amino acids 848-991 of a type F botulinum toxin (SEQ ID NO:2)

(c) amino acids 992-1135 of a type F botulinum toxin (SEQ ID NO:3),

and;

(d) amino acids 1136-1278 of a type F botulinum toxin (SEQ ID NO:4), which sequence is optionally fused to a polypeptide that facilitates or enhances purification.

38. (New) A method according to claim 37 wherein the polypeptide consists of SEQ ID NO:1.